ARMY ENERGY PROGRAM

FORT HOOD,TEXAS

Demand Side Energy Reduction Initiatives

Presented By

Jerry L. Vesey Jr.

General Engineer, Fort Hood Energy Office, DPW-Environmental Division

5 February 2005

Presentation Outline

- Unmeasured Initiatives - *Sustainability*
  - Installation Design Guide and Corp Specification Changes
  - FM Load Management
  - LON Controls Guidance
  - New Technology Implementation Guidance
  - Unit Training
- Measured Initiatives - *Performance Contracting*
  - ESPC Delivery Order #1
  - ESPC Delivery Order #1
- What Matters Most
  - Education, Collaboration, Leadership Backing

Unmeasured Initiatives

- Changes to IDG & Installation Specific Corp Specifications
  - Lighting Efficiencies and Power Factor Ratings
    - T8/32 watt/ 4100k with 95% PF and electronic Ballasts
  - Packaged Unit Efficiencies
    - 12 SEER Minimum FY 2005, 14 or 15 SEER Minimum FY 2007
  - Boiler and chiller Efficiency Ratings
    - In development
  - Occupancy Sensors Mandatory in Admin Facilities
  - Minimum R-values of 30 for Roofs

Unmeasured Initiatives

- FM Load Management/Peak Shaving Strategy
- LON Works Controls/Master Planning Strategy
  - CERL Tech Guidance Project for New Building HVAC Lon Compliant Database Turnover Procedures.
  - Reviewing Controls Architecture for Base-wide application
- New Technology Implementation Guidance
  - Follow-on Projects with CERL to determine at what point New technologies will become viable for Fort Hood
- Monthly & Quarterly Unit Training

WHY CONSERVE ENERGY?

- IT'S SIMPLE
- IT BENEFITS EVERYONE
- REDUCES INCREASING UTILITY COST
- IT'S JUST THE RIGHT THING TO DO

TOPICS

- ARMY ENERGY PROGRAM
- FORT HOOD ENERGY PROGRAM
  - FACILITIES ENERGY GOAL
  - FORT HOOD PERFORMANCE
  - ENERGY EFFICIENCY IMPROVEMENTS
  - ENERGY REDUCTION STRATEGIES

Earth Day 18 & 19 April 2003

Exchange that pair of old tennis shoes
for a Energy Saving Spiral Bulb

Limit (2) bulbs per household, please!

Measured Initiatives

- ESPC - Delivery Order #1
  - VFD’s for Cooling Tower Fans
  - Lighting Retrofits
  - Vending Misers
  - Controls
    - Savings calculated on Scheduling Only
    - LON Web based Solution Based

Measured Initiatives

- Lighting Retrofit
  - Improved Lighting Levels (Before - 14 FC, After - 34 FC)
  - Customer Satisfaction and productivity reports positive
  - Low cost ECM with quick Pay back

Measured Initiatives

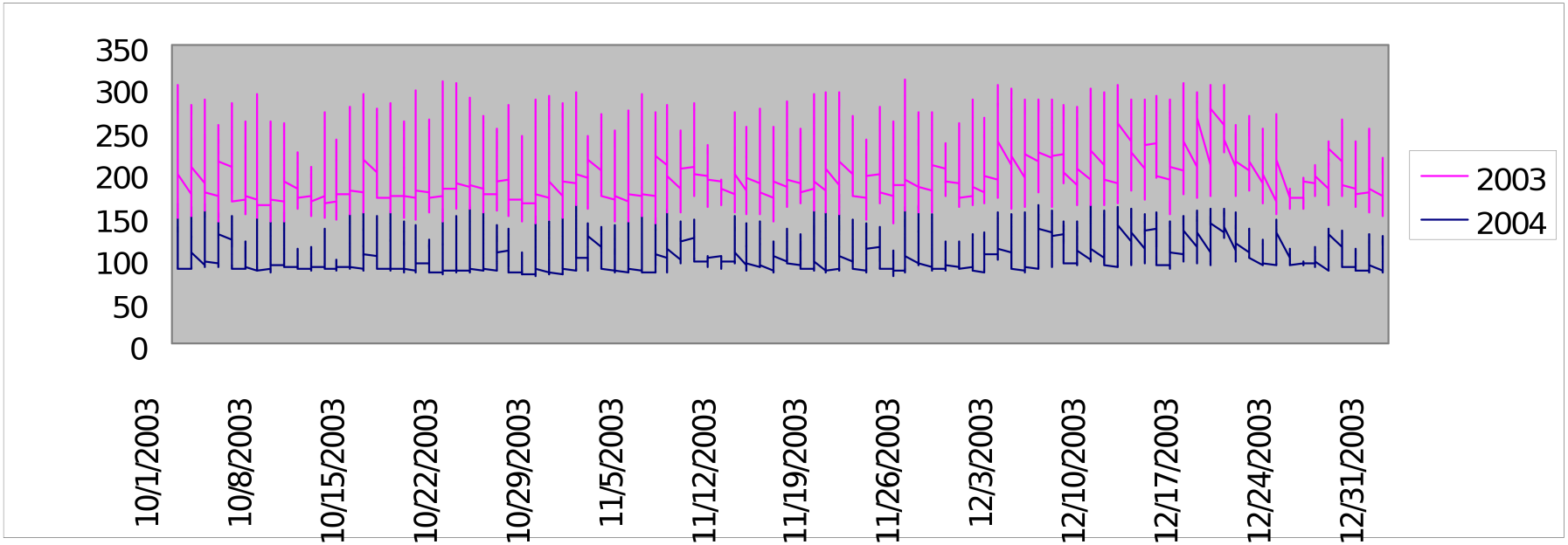
- Vending Misers
  - 30% to 50% savings realized
  - Reduced compressor runtime
  - Product temperature maintained
  - Low vandalism rate
  - Reimbursable Customer Buy-In

Measured Initiatives

- Controls
  - Savings calculated on Scheduling Only
  - LON Web based Solution Based

Example of Conditions Before Controls Retrofit →

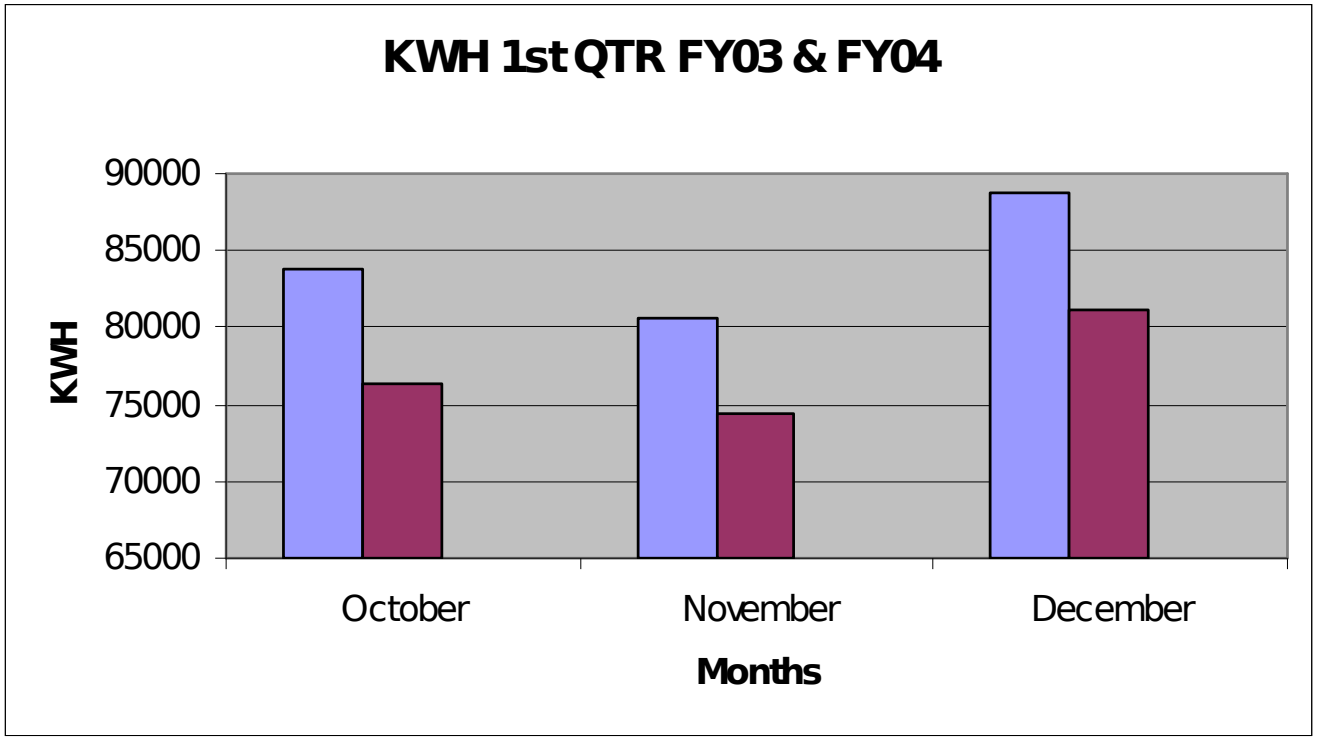
Building 5746 - Officer's Club
KWH SAVINGS
1ST QUARTER 2003 AND 2004



TOTAL 2003	253177 KWH
TOTAL 2004	232016 KWH
NET SAVED	21116 KWH
$$$ SAVED	$ 1,575.25

NOTE: PEAK COOLING SAVINGS SHOULD BE GREATER

KWH SAVINGS
1ST QUARTER 2003 AND 2004



2003	83775	80671	88731
2004	76368	74455	81197

Measured Initiatives

- ESPC - Delivery Order #2
  - VFD, Lighting, Vending Misers, Controls
    - Super T8 and Ballast (28 watt Lamps)
  - Solar Powered Pool Heating
  - Cooling Tower Filtration Project
  - Preventive Maintenance
  - Building Re-Commissioning
    - Air and Water Flow Balancing

What Matters Most!

- Education
  - In-House Work Force
  - Customers
- Collaboration
  - ESPC Contractor, Construction Contractors, In-House Work Force
- Leadership Support
- Measurement & Verification
- Good Preventative Maintenance and Operational Maintenance